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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,224	04/07/2006	Tadashi Ogasawara	12054-0057	7020

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EXAMINER	
ZHU, WEIPING	
ART UNIT	PAPER NUMBER
1793	
MAIL DATE	DELIVERY MODE
11/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,224	OGASAWARA ET AL.	
	Examiner	Art Unit	
	WEIPING ZHU	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/26/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 8-23 are currently under examination, wherein claims 11, 17, 18 and 21 have been amended in applicant's amendment filed on August 29, 2008. Claims 1-7 have been cancelled in the same amendment

Status of Previous Rejections

2. The previous rejections of claims 1-23 under 35 U.S.C. 103 (a) as being unpatentable over Murphy (US 4,487,677); the previous provisional rejections of claims 1-7 under 35 U.S.C. 101 as claiming the same invention as that of claims 1-7 of copending Application No. 10/575,225; the previous provisional rejections of claims 1 and 11 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/589,879; the previous provisional rejections of claims 2-10 and 12-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of the copending Application No. 10/589,879 in view of Murphy ('677); the previous provisional rejections of claims 1-3, 6-14 and 16-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 11 and 12 of the copending Application No. 10/589,949; the previous provisional rejections of claims 4, 5 and 15 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 11 and 12 of the copending Application No. 10/589,949 in view of Murphy ('677); the previous provisional rejections of claims 1-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6

and 9-12 of copending Application No. 10/590,863 in view of Murphy ('677); the previous provisional rejections of claims 1-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 and 11-15 of copending Application No. 11/665,976 in view of Murphy ('677); the previous provisional rejections of claims 1, 8, 11 and 12 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 11/991,072 in view of Murphy ('677); the previous provisional rejections of claims 2-7, 9, 10 and 13-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of the copending Application No. 11/991,072 in view of Murphy ('677); the previous provisional rejections of claims 1 and 5 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/992,162 in view of Murphy ('677); and the previous provisional rejections of claims 2-4 and 6-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of the copending Application No. 11/992,162 in view of Murphy ('677) as stated in the Office action dated June 5, 2008 have been withdrawn in light of applicant's amendment filed on August 29, 2008.

The previous provisional rejections of claims 8-23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8-12, 15-18 and 20-23 of copending Application No. 10/575,225 in view of Murphy ('677) as stated in the Office action dated June 5, 2008 have been maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 8-23 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Murphy ('677).

With respect to claims 8, 10, 12-14 and 17-20, Murphy ('677) discloses a method for producing Ti particles through reduction by Mg comprising (col. 2, line 31-41, col. 4, line 18 to col. 7, line 29 and col. 9, line 56 to col. 10, line 17):

electrolyzing a molten salt of magnesium chloride to produce magnesium, wherein the molten magnesium being a cathode;

chlorinating titanium ore with chlorine gas to produce titanium tetrachloride;

reacting magnesium with titanium tetrachloride in the molten salt to produce titanium sponge and replenish magnesium chloride;

separating the titanium particles from the molten salt; and

recycling the magnesium chloride generated in the reduction reaction of magnesium and titanium tetrachloride as a by-product by electrolyzing the magnesium chloride to generate and replenish magnesium and to produce chlorine gas for the reduction reaction and chlorination steps respectively.

Murphy ('677) does not specify using Ca as a reducing agent. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to substitute the magnesium chloride with calcium chloride to provide calcium as a reducing agent in the process of Murphy ('677) with an expected success, because magnesium sodium and calcium chlorides are functionally equivalent in terms of providing the reducing agents as disclosed by Murphy ('677) (col. 1, lines 11-17). See MPEP 2144.06.

With respect to claim 21, see the reason for the rejection of the claimed limitation of using calcium as the reducing agent in the paragraph above.

With respect to claim 11, Murphy ('677) discloses that the titanium tetrachloride can be in the form of a gas or a liquid (i.e. molten salt as claimed) (col. 11, lines 39-46).

With respect to claims 9 and 16, Murphy ('677) does not specify the claimed features. However, the electrode configuration and the location where the molten salt of magnesium chloride formed during the reduction reaction is introduced as disclosed by Murphy ('677) (col. 9, line 56 to col. 11, line 3) reads on the claimed features.

With respect to claim 15, Murphy ('677) discloses that the temperature of the molten salt in the electrolyzing step (col. 5, lines 62-65) is lower than that in the reaction step (col. 13, lines 9-11).

With respect to claim 22, Murphy ('677) does not disclose the claimed feature. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce other metallic chloride other than titanium tetrachloride in order to produce a titanium alloy as desired.

With respect to claim 23, Murphy ('677) does not specify the titanium particle size as claimed. However, it has been well held where the claimed and prior art products are

identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the claimed and Murphy ('677)'s titaniums are identical or substantially identical in composition and are produced by identical or substantially identical processes, therefore a prima facie case of obviousness exists. The same average particle size would be expected in the titanium of Murphy ('677) as in the claimed titanium.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 8-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8-12, 15-18 and 20-23 of copending Application No. 10/575,225 in view of Murphy ('677) as stated in the Office action dated June 5, 2008.

5. Claim 11 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/589,879. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the copending application discloses a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 8-10 and 12-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of the copending Application No. 10/589,879 in view of Murphy ('677).

Murphy ('677) is further applied to the claimed limitations in the instant claims 8-10 and 12-23 for the same reasons as stated in the paragraph 3 above.

6. Claims 8--14 and 16-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 11 and 12 of copending Application No. 10/589,949. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-6, 11 and 12 of the copending application disclose a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 15 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 11 and 12 of the copending Application No. 10/589,949 in view of Murphy ('677).

Murphy ('677) is further applied to the claimed limitations in the instant claim 15 for the same reasons as stated in the paragraph 3 above.

7. Claims 8-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 and 9-12 of copending Application No. 10/590,863 in view of Murphy ('677). Although the conflicting claims are not identical, they are not patentably distinct from each other because the

claims 1-6 and 9-12 of the copending application disclose a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application. The claims 1-6 and 9-12 of the copending application do not disclose the electrode configuration and the temperature difference between the molten salts in the electrolytic cell and in the reactor vessel as claimed. Murphy ('677) is further applied to the claimed limitations in the instant claims 8, 9, 12, 15 and 16 for the same reasons as stated in the paragraph 3 above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 8-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 and 11-15 of copending Application No. 11/665,976 in view of Murphy ('677). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-5 and 11-15 of the copending application disclose a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application. The claims 1-5 and 11-15 of the copending application do not disclose the electrode configuration and the temperature difference between the molten salts in the electrolytic cell and in the reactor vessel as claimed. Murphy ('677) is further applied to the claimed limitations in the instant claims 8, 9, 12, 15 and 16 for the same reasons as stated in the paragraph 3 above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 8, 11 and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 11/991,072. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 13 of the copending application discloses a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 9, 10 and 13-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of the copending Application No. 11/991,072 in view of Murphy ('677).

Murphy ('677) is further applied to the claimed limitations in the instant claims 9, 10 and 13-23 for the same reasons as disclosed in the paragraph 3 above.

10. Claims 8-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/992,162 in view of Murphy ('677). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-4 of the copending application in view of Murphy ('677) disclose a method for producing Ti or Ti alloy through a reduction by Ca, which is the same or obvious from the claimed method of the instant application. Murphy ('677) is further applied to the claimed limitations in the instant claims 8-23 for the same reasons as disclosed in the paragraph 3 above

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

11. The applicant's arguments filed on August 29, 2008 have been fully considered but they are not persuasive.

The applicant argues that Murphy ('677) does not teach that an alloy electrode made of molten Ca alloy is employed for a cathode as claimed in the instant claims 8 and 12. In response, the examiner notes that Murphy ('677) discloses (col. 2, line 31-41, col. 4, line 18 to col. 7, line 29 and col. 9, line 56 to col. 10, line 17) a method for producing Ti particles through reduction by Mg, which meets all the claim limitations of the instant invention as discussed in the paragraph 3 above. Murphy ('677) does disclose that the molten magnesium is employed as a cathode (col. 10, lines 6-17 and Fig. 8).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

WZ

11/17/2008